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## MESSAGE

FROM

## THE PRESIDENT OF THE UNITED STATES,

COMMUNICATING

*Copies of a report and letter from the commissioners appointed for the exploration and survey of the northeastern boundary.*

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FEBRUARY 8, 1842.Read, and ordered to be printed.

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*To the Senate of the United States:*

I transmit, herewith, to the Senate, copies of a report and letter from the commissioners appointed by the President, for the exploration and survey of the boundary line between the States of Maine and New Hampshire, and the conterminous British provinces, showing the progress made in that work during the past season; and submitting an estimate, to which I invite the attention of Congress, of the funds that will be requisite for completing the surveys yet to be made on the boundary, and the office work consequent thereon, and for completing the maps of surveys already made.

JOHN TYLER.

WASHINGTON, February 5, 1842.

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NEW YORK, January 4, 1842.

The undersigned, commissioners appointed by the President of the United States for the purpose of exploring and surveying the boundary line between the States of Maine and New Hampshire and the British provinces in North America, respectfully report:

That, in pursuance of the duties of their appointment, they have, in the course of the late season, performed the following surveys and explorations:

1. The meridian line of the monument at the source of the St. Croix has, under the direction of J. D. Graham, been carefully and accurately traced from the station in the vicinity of Houlton, where the labors of the year 1840 terminated, to a point four miles north of the St. John's river, in the vicinity of the Grand falls, being a distance of eighty-one miles from the monument. The timber has been removed along this line to a width necessary for its accurate prolongation, and for the requisite astronomical observations at various points upon it; and a correct profile, or vertical section, has also been obtained, by means of the spirit level, the whole of the distance above-mentioned.

Beside the astronomical observations necessary to obtain and continue the Thomas Allen, print.

due north direction upon this line, numerous magnetic observations have also been made at a number of points upon it, in order to show the physical causes which must operate to produce serious discrepancies between a meridian line properly traced and such a one as has actually separated the jurisdiction of the two Governments since the attempt, in the years 1817 and 1818, to define and mark this portion of the boundary under the provisions of the treaty of Ghent, although no portion of that line was ever ratified or made binding upon the parties to the treaty.

Upon this portion of the survey there have been chained, including measured offsets to the old line, and to other important points, eighty-five miles.

Four hundred and fifty-two transit observations of heavenly bodies have been made, aided by three excellent chronometers, for the determination of the true meridian direction, most of which also served for the computation of the correct time.

For the determination of the longitude of this meridian, west of the royal observatory of Greenwich, and the latitudes of four important points upon it, there were made eighty-five complete sets of astronomical observations, including altitudes of the sun and stars, and the meridian transits of the moon and moon-culminating stars.

The number of barometric observations made upon the line and in its vicinity is five thousand seven hundred and sixty-seven; beside which, there were made at Calais, for comparison with the level of mean tide on the St. Croix, one thousand three hundred and thirty-six similar observations.

There have been determined in altitude above or below the level of the monument, by means of the spirit-level, one thousand seven hundred and sixteen points, and the altitudes of one thousand eight hundred and sixteen other points have been similarly observed, in order to verify the altitude of the monument above the level of mean tide at Calais.

For the determination of the magnetic variation at a number of points on the meridian line, more than two hundred observations have been made upon four different needles, and for the determination of the magnetic dip at four principal stations on the same meridian, three hundred observations have been made upon two different needles.

Under the direction of the same commissioner, the line claimed by Great Britain from Mars Hill, and that recently chosen by Messrs. Mudge and Featherstonehaugh, have been surveyed westward from the meridian line to the highlands near the head waters of the Aroostook, and the necessary data obtained for the construction of a correct map of that portion of country.

Upon this survey, without reckoning the distances travelled for approaching many important points of observation, there have been actually measured with the chain, and coursed with proper instruments, two hundred and sixty-seven miles, including the Aroostook river from its mouth to the point where it receives the Lapawmpeag stream, a profile of the country from the head waters of the Moluncus to the St. John's at Fish river, and such other important lines as were necessary for obtaining the correct topography of the country; and the altitudes of many points upon the line claimed by Great Britain as the boundary, in the vicinity of the Aroostook, have been obtained.

Ten principal points have been determined in latitude and longitude, by means of one hundred and fifteen sets of astronomical observations, aided by three good chronometers; and seventeen other points have been determined by triangulation, with a portable theodolite. Two hundred and five points have been determined in altitude, by means of one thousand three hundred

and nineteen barometric observations, and seventeen by means of the theodolite and spirit-level. One hundred and ninety-two observations have been made for determining the variation of the magnetic needle, at three important points.

The field duties abovementioned are considered to furnish sufficient data for a correct map of the line reported upon by the late British commissioners, Colonel Mudge and Mr. Featherstonhaugh, between the St. John's river and the head of the Aroostook; beside some lateral explorations, of considerable extent, that will have an important bearing upon this branch of the subject. The work accomplished is full as much as could have been properly done in a single season, marked, as the last was, by an unusual drought of long continuance, which rendered it impossible to ascend, even with light canoes, some of the smaller streams, especially those forming the northwesternmost sources of the Aroostook: these might be profitably explored another season.

2. The division under the direction of A. Talcott has, beside verifying a part of the line of 1840, and tracing the course of Indian stream (a branch of the Connecticut), to its source, explored and surveyed the line of highlands which extends from the Kennebeck road to the Temiscouata portage; and so much of the line claimed by Great Britain as extends from the Kennebeck road, to the eastward, as far as the head of the Aroostook river.

In the course of this survey, without counting the lines of approach, or ground travelled over more than once, seven hundred and three miles have been passed over, and such notes taken as will form the basis of a map. Of these seven hundred and three miles, three hundred and thirty-five are upon the lines respectively claimed as boundaries by the Governments of the United States and Great Britain. In the course of these surveys, in order to the geographical determination of the position of the line, the latitudes of fifty-four points have been determined, by means of one hundred and fourteen sets of altitudes of heavenly bodies; and the sets of subsidiary observations for time, and for the determination of longitude, by chronometers, amount to two hundred and forty-five. The number of points at which observations have been made by barometers, for the purpose of determining their altitudes, is nine hundred and thirty, of which six hundred and sixty-nine are upon the boundaries respectively claimed by the two countries. The number of separate sets of barometric readings made at these points, amount to nineteen hundred and eighty-one, while those made at the fixed stations, with which the former are to be compared, amount to sixteen hundred and seventy-one.

3. The division under the direction of J. Renwick, has explored or surveyed the line of highlands, from the southeastern extremity of Lake Metapedia to the vicinity of the River du Loup, where the line of survey has been connected with that of A. Talcott. In this survey a gap is yet left of a few miles on the western side of the valley of the Rimouski, near its source.

In the course of the operations of this division, five hundred and eighty-six miles have been passed over, and such notes taken as will form the basis of a map. Of these five hundred and eighty-six miles, two hundred and seventy-five have been actually measured: two hundred and nine are upon the boundary claimed by the United States, and about thirty upon the line pointed out by the proclamation of the King of Great Britain, of the 7th of October, 1763, as the southern boundary of the province of Quebec, making, in all, two hundred and thirty-nine miles of the height of land.

In the course of these surveys, in order to the geographical determination of the position of the line, the latitudes of forty-seven points have been determined, by means of eighty-five sets of altitudes of heavenly bodies; and the sets of subsidiary observations for time, and for the determination of longitude by chronometers, amount to one hundred and thirty. The number of points at which observations have been made by barometers, for the purpose of determining their altitudes, is four hundred and seven, of which two hundred and sixty-seven are upon the boundary claimed by the United States. The number of separate sets of barometric readings made at these points, amounts to eleven hundred and fifty-three, while those made at the fixed stations amount to eight hundred and thirty-seven.

The division of Major Graham not having returned from the field until within a few days, neither the reduction of the astronomical observations nor any of the office work preparatory to a general map has yet been commenced by his division.

The office work of the division of A. Talcott and J. Renwick has been steadily carried on since the return of those commissioners from the field in the month of October, and great progress has been made in the calculations and plotting preparatory to the construction of maps, and necessary as materials for a general report.

In this state of the work of the several divisions, the undersigned find themselves under the necessity of communicating to the State Department that the further progress of their operations is about to be arrested by the exhaustion of the appropriation, and of stating that unless speedy provision be made for the supply of the necessary funds, the report of their operations cannot be made up in time to be laid before Congress at its present session.

The position of the finances of the commission may be seen by the following statement:

Of the appropriation of seventy-five thousand dollars there have been drawn—

By J. Renwick	-	-	-	-	\$21,000
By A. Talcott	-	-	-	-	24,200
By J. D. Graham	-	-	-	-	25,000
Total drawn	-	-	-	-	<u><u>70,200</u></u>

Leaving in the Treasury of the United States four thousand eight hundred dollars.

By a careful estimate, it is found that to finish the office work of the several divisions there will be required over and above any balances in the hands of the several commissioners—

For the division of J. Renwick	-	-	-	-	\$3,000
For the division of A. Talcott	-	-	-	-	5,800
For the division of J. D. Graham, including some arrearages due for instruments, and to assistant engineers attached to this division	-	-	-	-	6,500
					<u><u>15,300</u></u>

Making, in all, fifteen thousand three hundred dollars, and leaving to be provided for the completion of the work of the late season ten thousand five hundred dollars.

The undersigned cannot refrain from stating that the necessity of applying for further funds was unexpected by each of them individually, as it is painful to them collectively. There are, however, reasons that, in their opinion, are incontrovertible, which have led to an expenditure thus exceeding their estimate submitted to the Secretary of State the 11th of January, 1841:

1. The estimate for the expenses of the division under the direction of Major Graham amounted to twenty-two thousand five hundred dollars. This referred only, however, to the continuation of the survey of the meridian line, and, as the country had been represented by the most authentic maps as generally rising from the monument to the north, it was inferred that the timber to be cut away in opening this line through a dense forest would be of the description generally found upon elevated and dry lands, and the labor supposed to be requisite was estimated accordingly. So far, however, from this being the case, twenty-six miles out of the thirty-two, between the base of Park's ridge, near Houlton, and the river Des Chutes (six miles north of the latitude of Mars Hill), have actually been found to be below the level of the monument, and intersected by swamps covered with a thick growth of cedar and other timber common to such land, extremely difficult to cut away. More than double the labor estimated had, therefore, to be performed in accomplishing this and all similar portions of the work, and a corresponding increase of expense was unavoidable.

In addition to this increased labor upon the meridian line, the division of Major Graham has executed the surveys between that line and the head waters of the Aroostook, already given in detail, the expenses for which were not estimated or included in the sum above mentioned.

The cost of this survey, including the instruments that were required for it, has amounted to five thousand five hundred dollars; and, while this sum should be added to the original estimate for this division, the expenses of the divisions of the other two commissioners have not, in any manner, been thereby diminished, for the actual quantity of work performed by them has exceeded what was supposed from the best maps extant to be necessary upon the whole of the lines claimed by the two Governments respectively, exclusive of the meridian line, as will hereafter be shown.

There was another cause which tended, in a great degree, to augment the expenses of this division in proportion to the progress of the work, which it was not within the power of human agency to control, and which we should not omit to mention here.

The severe drought which prevailed throughout this region of country during the month of August and the greater part of September, caused the fires, which are annually set to the fallen timber upon newly-cleared lands, to spread far and wide into the growing forest, and so rapid was its progress, and so serious its ravages, as to compel the inhabitants, in many cases, to fly for the preservation of life. Some check was experienced in the duties along the meridian line, from the flames that actually embraced it, but a far more serious one from the dense smoke which filled the atmosphere almost incessantly for six weeks, and so obstructed the view as to render it impossible to fix the stations in advance with the requisite precision.

While the party charged with the astronomical operations was thus deprived of the opportunity of making scarcely any progress for six weeks, the expense of maintaining it could not in any way be diminished, because there was a daily hope that such a change in the weather might occur as would have removed this difficulty.

In order to make amends, as far as practicable, for so much time unavoidably lost, this division continued to prosecute its field duties north of the forty-seventh degree of latitude, until several weeks after the severities of winter had commenced, with no other protection than their tents; the commissioner in charge of it believing that the expectations of the Government, and of the country generally, would but be fulfilled by the investigations in relation to this important line being pushed to the utmost attainable point. But for this, it would have been impossible to have reached the St. John's river the late season.

There remains to be surveyed along this meridian line, in order to reach the northwest angle of Nova Scotia, as claimed by the United States, about sixty-four miles, to accomplish which will require another season of active field duty.

2. In the estimate for the work of the divisions of A. Talcott and J. Renwick, it was assumed that the length of the boundary remaining on the line claimed by the United States, was three hundred and twenty miles, and upon the lines claimed by Great Britain, one hundred and seventy miles.

Of the latter, about one half was undertaken by Major Graham's division,\* leaving for the estimated distance to be surveyed by the divisions of A. Talcott and J. Renwick, four hundred and five miles.

It will appear by the statement hereinbefore given, that the joint surveys of these two divisions upon the lines of highlands have actually amounted to five hundred and seventy-four miles. Upon the principle of their estimate, the probable cost of this would have amounted to forty-nine thousand seven hundred and forty-six dollars and thirty-seven cents, and, with the addition for instruments, and for the additional cost of the more remote parts of the line, to fifty-seven thousand seventy-nine dollars and seventy cents.

The actual cost, including the foregoing estimate, for the completion of the work, is fifty-four thousand dollars.

It will appear, therefore, that when the increased extent of the work performed, over that made the basis of the estimate, is considered, the cost of performing it, so far from having exceeded the estimate, has fallen short of it by three thousand dollars.

The reason of the discrepancy between the real extent of the line, as actually measured, and that which formed the basis of the calculation, is, that the latter was made by reference to the best existing maps, which were considered to be entitled to a certain degree of credit. Upon the close examination which the operations of the late season have afforded, these maps have been ascertained to be exceedingly erroneous. Well-known streams have been found to extend in either direction, many miles beyond the points at which their sources have been laid down on the maps, and great rivers and lakes have, as it were, been discovered, of which no delineation had ever been given by geographers. The extent of these errors in remote and difficultly-accessible points, may be inferred from what has been found to occur in the part of the region which is most accessible, best known, and most frequently traversed.

On the Temiscouata portage, a road travelled weekly by the mail of her Britannic majesty, continually passed by the officers of her various services,

\* It has already been stated, that in the survey of the portion of this line allotted to Major Graham, there were actually measured upon it, with the chain, two hundred and seventy-six miles, and this did not constitute more than one half the labor and expense incident to all the duties enumerated and performed by his division, on his portion, so much did the work required upon this portion of it exceed what was estimated for the whole of it.

which had been carefully surveyed by civil engineers, preparatory to its reconstruction, and which has been travelled by the surveyors of both countries under the joint commission, it had hitherto been believed, and it was so represented on all the maps, both English and American, that the line dividing the waters crossed the road three times. The surveys of the late season show that the boundary claimed by the United States crosses this road five times, and it became necessary to explore the culminating points of the valleys of four streams, instead of two, as had been anticipated. Instances of the same sort, but which do not admit of verbal description, have occurred on every part of the lines of highlands.

The two commissioners whose operations are under consideration, no doubt had it in their power to have suspended their operations, and returned so soon as the portion of the appropriation placed at their disposal was so far exhausted as to leave no more than would be needed to complete their office-work. But they feel satisfied that they would not have been justified in so doing, so long as any portion of the line remained unsurveyed, or the weather would permit a party to keep the field. Thus, although in the original plan for the partition of the work, it was estimated that their lines would probably be connected in the parallel of the river Orielle, about thirty miles south of Temiscouata portage, when it was found that, from unforeseen delays in the transportation of the party of J. Renwick, by sea, to their work, and on the river St. Lawrence, from one station to another, it became doubtful whether he could pass the Temiscouata portage before the woods became impassable, his colleague continued his parties in the field until the junction was effected. In this way, while the expenses of the division of J. Renwick have not been materially diminished, those of the division of A. Talcott have been largely increased; but a portion of the general work has been accomplished which might otherwise have been left incomplete.

The undersigned, in conclusion, beg leave respectfully to urge the importance of a speedy appropriation to enable them to make up their report. A delay of any continuance will be productive of evil, either by enhancing the cost of office-work, or by rendering it difficult in consequence of the dispersion of the engineers and surveyors by whom the field-notes have been taken. Upon the completion only of such a report, will it be possible to render apparent how much of the whole task has been accomplished, and how much remains to be performed; and the Department will then have it in its power to decide whether the part that has not been completed is of such importance to the question at issue as to require further operations upon it.

All which is respectfully submitted.

JAS. RENWICK,  
A. TALCOTT,  
J. D. GRAHAM,  
*Commissioners.*

Hon. DANIEL WEBSTER,  
*Secretary of State.*

WASHINGTON, January 25, 1842.

SIR: The undersigned, commissioners appointed by the President of the United States, for the purpose of surveying and exploring the boundary line

between the States of Maine and New Hampshire, and the British provinces, beg leave, in compliance with your directions, to submit an estimate for the operations of the commission for the ensuing year.

So much of your directions as regard the state of the survey, and the amount required to complete the office work, preparatory to a report, has already been laid before you, in their report of the 4th January, 1842, prepared in anticipation of your orders. By reference thereto, it will appear that the delineation of the meridian of the source of St. Croix, has not, in spite of every effort on the part of the commissioner to whom it was assigned, been pursued further than eighty-one miles from the monument. Sixty-four miles, therefore, of the said meridian line remain to be surveyed, before this part of their task is completed. The other two commissioners, while they would not have hesitated to join in a final report, in case the state of the survey of the meridian line would have permitted it, are aware that the hasty manner in which their work was performed, in anticipation of completing the object of their appointment, during the past year, leaves room for a more accurate examination of some parts of the lines they have surveyed. Some portions, also, of the lines intrusted to them, respectively, were not reached; and, in addition, a part of the survey which was contemplated in their original instructions from your predecessor, was not included in their estimates for the past year, in consequence of its having only a collateral relation to the main object.

Thus the surveys, respectively undertaken by Messrs. Talcott and Graham, of the lines claimed on the part of Great Britain, and by Messrs. Mudge and Featherstonhaugh, although brought near to each other, have not been united; and a part of the highlands claimed by the United States, near the source of the Rimouski, was not reached by the parties of Professor Renwick.

The height of a part of the line explored by Captain Talcott, in 1840, lying at the source of Arnold's river, was not determined for the want of a barometer.

Two or three miles in length of the line of highlands, near the source of the River du Loup, require to be re-examined.

The longitudes of Lake Megantic, Lake Etchemin, the source of the Metjarmette, upon the line of Captain Talcott, and of some one point on the line of Professor Renwick, ought to be ascertained with greater precision than the time that could be allowed during the last season would permit.

The instructions of Mr. Forsyth contemplated an exploration of the highlands described in the proclamation of 1763, as beginning on the north shore of the Bay of Chaleurs. The existence of a continuous elevated region, from the tide of that bay to the termination of the exploring meridian line, has been ascertained in a manner satisfactory to the commission; but the heights have not been measured on that part of it which lies nearest to the Bay of Chaleurs.

Under these circumstances, the undersigned are of opinion that, as no delay in the presentation of a final report will arise from further explorations of the parts of the territory thus pointed out, and the more accurate examination of the uncertain matters, it would add to the confidence which may be placed in their results, that a party be employed, under the direction of each of the abovenamed commissioners, upon the said work. For this object it is estimated—

1. That twenty-five thousand dollars in all, say twelve thousand five hundred to be expended under the direction of each of the two above commis-

sioners, will suffice. A less sum than this will not keep two parties in the field during the working season; a larger sum could not advantageously be expended on this part of the work.

2. In estimating the amount necessary for completing the delineation of the meridian of the source of the river St. Croix, it will be borne in mind that numerous astronomical observations must be made, in aid of the operations with the transit instrument, in order constantly to preserve the true north direction; a condition of the utmost consequence, not alone as affecting the extent of territory that will be embraced by it, but more particularly because the character and position of the highlands alluded to in the treaty of 1783 would be exhibited in a very different light as encountered by a line running *due north*, as is required by the treaty, and by one varying even in a slight degree from that direction. This principle has already been exhibited in a striking manner, by the trace of the meridian line as far as it has now progressed; for, instead of encountering highlands in the latitude of Mars Hill having a claim to be considered those described in the treaty as the intended boundary between the two countries, the line as recently traced actually passes that latitude at an elevation of less than ten feet above the level of the monument, and the greatest elevation encountered by this line, in passing over any spur connected with Mars Hill, is sixty-three feet above the level of the monument. In advance of this spur, the line becomes again depressed below the level of the monument, at several points before it reaches the Aroostook.

These, however, are only a few of the many facts that might be adduced from the surveys already made, to show how important it is to the question at issue, that every necessary means to avail of the aids of science should be adopted, in order to preserve scrupulously the direction specified in the treaty, while tracing this line. It must also be remembered that, in the further prosecution of this duty, a wilderness has to be traversed, totally uninhabited, and totally without roads. The only means of progressing through it, and of transporting the necessary provisions and the instruments indispensable to accuracy, will be by means of canoes for supplying two or three depots at points where Grand river and the waters of the Ristigouche intersect the line, leaving the whole transportation along the meridian to be performed by packmen, or men carrying burdens on their backs. That the usual avenue to give an unimpeded view along the line must be opened through a dense forest, which, in the neighborhood of all streams crossing it, will still be found to consist of that swampy growth described in the report from the undersigned of the 4th of January instant, as requiring so much labor to cut through it.

With all these circumstances in view, the following estimate for the completion of the survey of the meridian line, and for some further surveys between that line and the source of the Aroostook, is submitted; and it is intended to embrace the expense of completing both the field and the office work that will require to be done in order to a final accomplishment of the duties.

*Estimate for the meridian line.*

1. Pay of four assistant engineers, from May 1, 1842, to March 31, 1843, being 304 days, at \$4 per day each	\$4,864 00
2. Pay of three other assistant engineers, from May 1, 1842, to December 31, 1842, being 275 days, at \$3 per day each	2,475 00
3. Hire of thirty men, as axemen, and for preparing, constructing, and erecting, stations and signals in advance, from June 1 to November 30, 1842, being 183 days, at \$1 each per day	5,490 00
4. Hire of thirty other men, as instrument-carriers, chain-bearers, canoe-men, and packmen, for 183 days, as above, at \$1 per day each	5,490 00
5. Hire of one carpenter and two cooks, 183 days, as above, at \$1 25 per day each	686 25
6. Subsistence of one commissioner, seven assistant engineers, one carpenter, two cooks, and sixty men, as above, being, in all, seventy-one persons, while in the field, 183 days, at 50 cents per day each, including transportation of provisions to Grand falls of St. John's, or 1st depot	6,496 50
7. Purchase of barometer, and repairs of instruments heretofore used	800 00
8. Salary of commissioner	3,000 00
9. Contingencies, including stationery, office-rent, and fuel, and transportation of engineers and commissioner to and from the field	1,500 00
Total required for the meridian line	<hr/> 30,801 75

That is to say, thirty thousand eight hundred and one dollars and seventy-five cents: making the whole amount for the work yet to be performed in the field, on all parts of the boundary, and for the office-work that will be consequent from the said field-work, \$55,801 75.

All which is respectfully submitted.

JAS. RENWICK,  
A. TALCOTT,  
J. D. GRAHAM, } *Commissioners.*

Hon. DANIEL WEBSTER, *Secretary of State.*

**RECAPITULATION.**

1. Amount of estimate for completing the surveys yet required to be made on the boundary, as above stated	\$55,801 75
2. Amount of estimate rendered with report of January 4, 1842, for completing maps of surveys already made, &c.	10,500 00
Aggregate amount required	<hr/> 66,301 75